Masa Ikuse* & Sachiko Kurosawa**: Notes on Sect. Zabelia Rehder of the genus Abelia.

幾瀬マサ*・黒沢幸子**: イワツクバネウツギ類についての観察

In Japan, the genus *Abelia* is represented by three distinct species, *A. spathulata* Sieb. et Zucc., *A. serrata* Sieb. et Zucc., and *A. integrifolia* Koidzumi. Among them *A. integrifolia* is the most remarkable one which belongs to Subsect. Biflorae of Sect. Zabelia Rehder. Compared with the species of Sect. Euabelia, *A. integrifolia* has salvar-shaped seemingly regular corollae with the cylindric tube which is not inflated at the throat but is thickend rather at the base and with 4 spreading lobes as a result of the union of two dorsal lobes, the base of petioles dilated connate and persistent enclosing winter-buds, young branches with retrorse stiff hairs, 6-grooved thick barks of older branches, and smooth zonorate pollen grains with a continuous equatorial band connecting orae (Plate IV & Fig. 1, 2). Most of these characters was deliberately pointed out by Dr. Rehder when he established his new Sect. Zabelia.

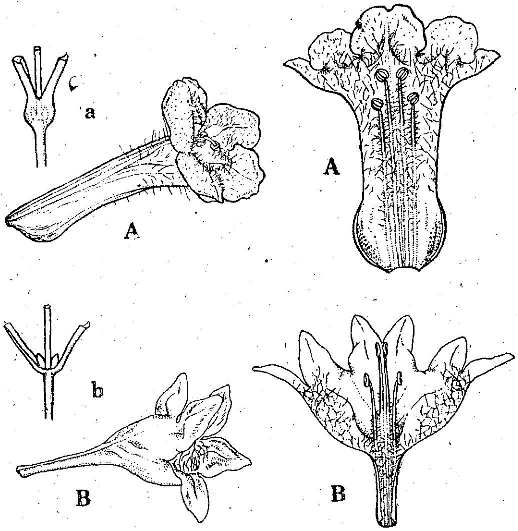

Fig. 1. A, a. *Abelia integrifolia*.
B, b. *A. spathulata* var. *sanguinea*.
(Corolla A.×2, B.×1.3; Nodal part of branch a, b.).

Dr. Erdtman observed the characteristic pollen grains in *Abelia triflora* R. Brown of Subsect. Corymbosae, and several Chinese species of Subsect. Biflorae of Sect. Zabelia. Pollen grains of *A. coreana* Nakai, *A. insularis* and *A. mosanensis* Chung of Sect. Zabelia were also examined by the senior

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authoress and were confirmed that they are similar to those of *A. integrifolia*, although those of *A. coreana* are zonaroide or have an equatorial oral zone not completely continuing around the grain. So we assume that all species of Sect. Zabelia have pollen grains of the same type which is unique in Caprifoliaceae. On the other hand, all pollen grains of Sect. Euabelia including Mexican *A. floribunda* Decaisne, are echinulate and not zonorate (without bands between orae), as in those of *Linnaea*, *Dipelta*, *Lonicera*, and *Leycesteria*.

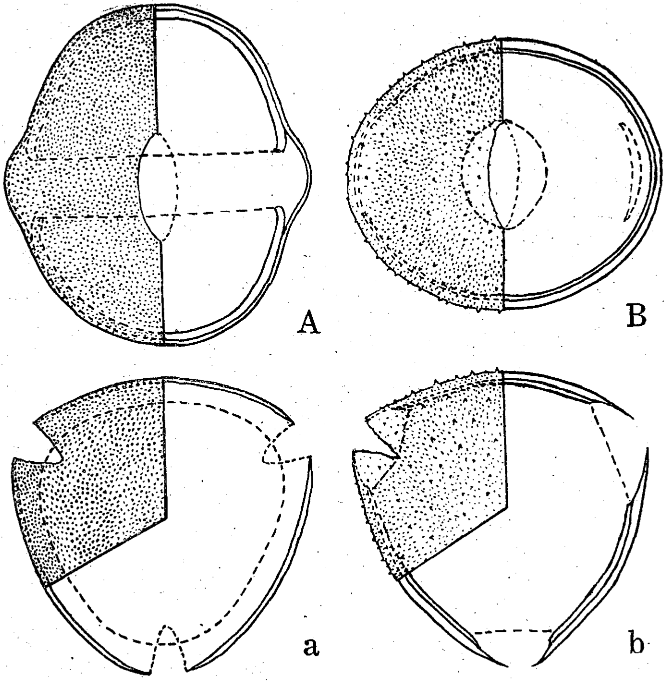
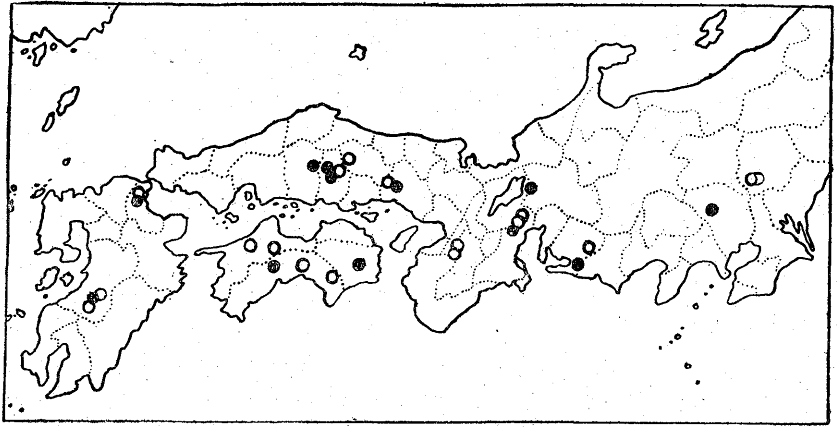


Fig. 2. Pollen grains of *Abelia integrifolia* (A, a) and *A. spathulata* (B, b). (ca.×500). (A, B. equatorial view; a, b. polar view).

Subsect. Biflorae centering around *A. biflora* ranges from western and middle China north to southern Manchuria, Korea and southern Ussuri occupying a more northern area in continental Asia than that of Sect. Euabelia. Having flattened more or less curved achenes, several species described from north China and Korea are very closely allied to *A. biflora*, and need a critical revision. *A. integrifolia* of Japan differs from *A. biflora* and its allies in having straight lustrous achenes 8–12 mm long, which are glabrous less flattened and attenuate to both ends, minute bracteoles, corolla-tubes (10) 12–15 mm long, and main nerves of leaves pubescent with ascending hairs beneath. It occurs on rocky mountains of western Japan, and its localities are sometimes very isolated and are often limited to calcareous or serpentine mountains, especially in middle Honshu (Map 1).



Map. 1. The distribution of *Abelia integrifolia*.
● specimens examined. ○ published records.

Subsect. Corymbosae typified by *A. triflora* with 5 calyx-lobes and 5 corolla-lobes is distributed on mountains of Afganistan, Turkestan, and western Himalaya, and also in western China and Korea.

As mentioned above, Sect. Zabelia Rehder including Subsect. Biflorae and Corymbosae, is so clearly defined by important morphological characteristics of the corollae, the base of petioles, and the pollen grains and also by anatomical character of wood1) that it seems to have good reason to regard *Zabelia* as an independent genus from *Abelia*, as suggested by Dr. Makino and Dr. Erdtman. *Zabelia* will probably be a natural group of a pretty old origin, which developed through a defferent evolutionary line from *Abelia*, *Linnaea*, and *Dipelta*.

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1) According to Dr. S. Watari who is preparing a paper on this subject, wood of this group has regular 6 aggregate-rays.

Zabelia (Rehder) Makino in Makinoa **9**: 175 (1948), nom. nud.

Abelia Sect. *Zabelia* Rehder in Plant. Wilson. **1**: 122 & 124 (1911).

Zabelia integrifolia (Koidzumi) Makino in Makinoa **9**: 175 (1948), pro syn.

Abelia integrifolia Koidzumi in Bot. Mag. Tokyo **29**: 312 (1915)-Hara, Enum. Spermat. Jap. **2**: 34 (1952).

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Literature

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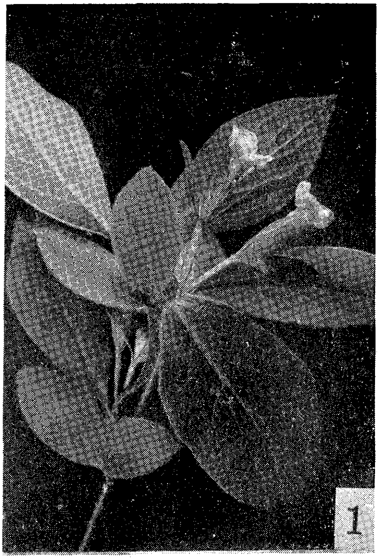
イワツクバネウツギは邦産の他のツクバネウツギ類にくらべるとかなり変つた性質をもつていて Rehder の Zabelia 節に属する。その花冠は細い円筒状の筒部と平開した裂片をもちツクバネウツギの様に著しい腹背性がない様に見え，若枝には逆毛を有し，葉柄の基部はひろがり癒合して腋芽をつつみ，その部分は永存性であり，樹皮は厚く明らかな六条の溝があり，花粉は3溝孔粒 (3-colporate) でその内孔は赤道部を帯状にとりまき所謂帯状孔 (Zonorate) であり，表面平滑で 0.3μ 以内の微細な網目模様がある。この類は朝鮮，支那，ヒマラヤ，アフガニスタンにわたつて数種あるが何れも共通の性質をもち，他のツクバネウツギ類とはつきり区別できる一群をなして居て，その起源もかなり古いものと思われる。殊にその花粉や枝の性質は，スイカズラ科において他にみられない特異なもので，牧野，Erdtman 両博士が云い出された様に独立のイワツクバネウツギ属 (*Zabelia*) と認めるに充分な理由がある様に思われる。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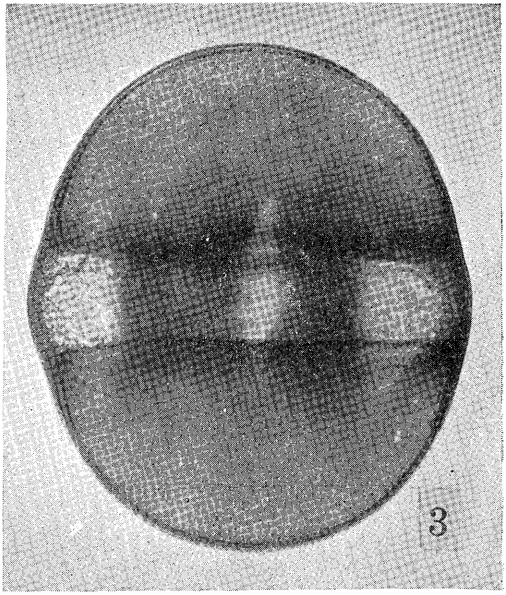
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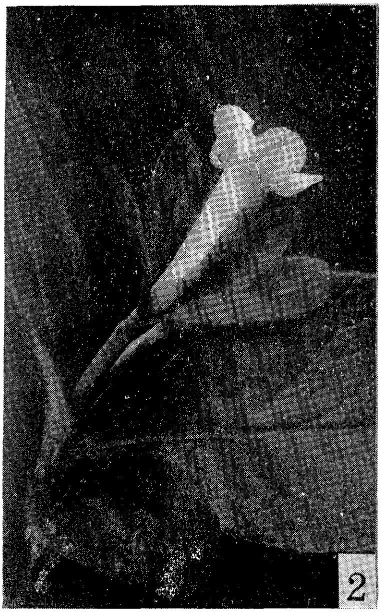
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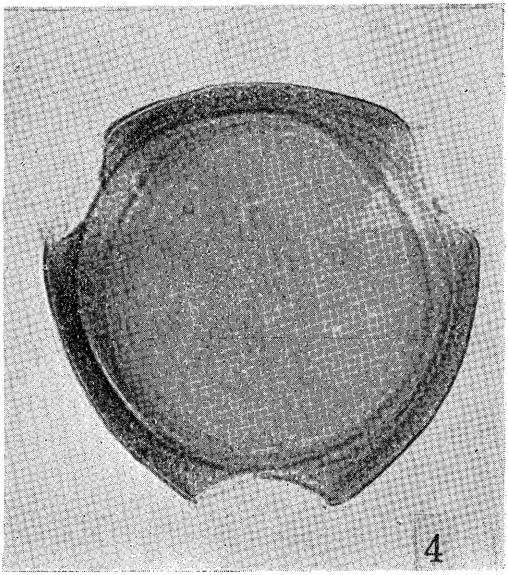
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M. Ikuse & S. Kurosawa: Sect. Zabelia of Abelia

Abelia integrifolia from Mt. Bukô of central Honshu, Japan.

1. Flowering branch (ca. 1/1). 2. The same (mag.).
3. Pollen grain (equatorial view). 4. The same (polar view).